GridCSP Case Study

Executive Summary

Due to its infrastructure and architecture limitations, the client's entire Citrix platform was running on two servers. The service was limited to small events, no more than 400 people, in addition to the lack of high availability and automation. The client's environment did not have the essential elements such as fault tolerance, robustness in the platform and security. We have migrated complete Citrix stack, AD and application servers.

The Challenge

Creating a secure platform with high availability and publishing their gaming application, which is accessed securely by users across various devices, from anywhere and at any time. In addition to this, limiting global access to this application was a necessity while taking into consideration security, maintenance, monitoring, regular backup and recovery policy and high availability of the servers and VPNs.

The following components are used as part of the Migration solution:

- AWS Server Migration Service
- Amazon Web Services Simple Monthly Calculator
- Migration Evaluator
- AWS Cloud Adoption Readiness Tool (CART)
- Building AWS Network Infrastructure as per the design
- Citrix
- NetScaler
- Delivery controllers
- Citrix Storefronts
- Gaming Application
- Citrix Profile data

About GridCSP

GridCSP Is a gaming platform that enables companies to rapidly deliver the best online gaming experiences to their customers. The gaming application is majorly published through Citrix platform. GridCSP serves customers worldwide.

The Solution

We had started the engagement with the client with an assessment phase to understand the Infrastructure and Application landscape. After the assessment, we had recommended migrating their gaming application from on-premises to AWS Cloud by using AWS Server Migration Service, while restricting application access from Client Source IP addresses. AWS cloud was used for deployment to take advantage of the AWS services for high availability, scalability, and enhanced performance. We have designed a solution in a way that the gaming application is hosted in multiple zones.

Technology Used

- **Migration**:
  AWS Server Migration Service
- **CITRIX MCS**
  Citrix MCS was used to deploy App Servers.
- **VPN**:
  - AWS Site-to-Site VPN
    - Border Gateway Protocol (BGP)

  Custom VPN strong Swan
  - OpenVPN

  AWS
  - AWS Systems Manager
    - Patch Manager
  - AWS Backup
  - Automated scheduled On-premises backup to Amazon S3 AWS Lambda for instance stop/start.
  - AWS CloudTrail and VPC Flow Logs for logs
  - AWS Config to capture resource compliance timeline AWS CloudWatch to monitor logs and notifications.

Security components

- **AWS**
  - Alerts were configured to trigger any changes in the environment.
  - Amazon Simple Notification Service (SNS) is implemented to push alerts, regularly.
- **AWS Security Hardening**
  - Security hardening (CIS Benchmark) is implemented in the environment.

Start and End date

- The project is started on June 2nd week (16/12/2019) and ended on September 4th Week (27/09/2019)

Value Adds

- **Improved Deployment Process**

  Deploys quickly and easily via Amazon Machine Image (AMI) so Citrix develops ETL jobs within minutes.

- **Security**

  Increase security posture by following CIS benchmarks and AWS Security Best practices.

- **Monitoring**

  Enhanced monitoring and alerting capabilities by configuring AWS CloudWatch.

- **Performance**

  The clients are extremely delighted with the performance and the ability to upgrade/ update the gaming application at any time by simply updating Master Image using Amazon Machine Image (AMI) which automatically replicates all Application Servers and users can access AWS resources from anywhere.

- **VPN**

  As the Customer is particular on VPN parameters and with a workaround the requirement was fulfilled.

  As the Customer is particular on VPN parameters and with strong Swan it was fulfilled.

- **LOW TCO**

  Save money by replacing physical hardware with expensive license fees, with AWS you pay for what you use.

Results

This migration helped deployments from traditional data center to Cloud seamlessly with high availability and utmost security. It also helped prevent DDOS attacks with the implementation of WAF and CloudFront with a DevOps Pipeline.

Deployment cost in VMWare: $2.19 per day
Deployment cost in AWS: $9 to 11 per month (40% of the cost is reduced)